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REQUEST FOR CERTIFICATE OF  
CORRECTION UNDER 37 CFR 1.322  
Docket No. UTR-103XC1  
Patent No. 6,855,536

*Frank C. Eisenschenk*

Frank C. Eisenschenk, Patent Attorney

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : John T. Loh, Gary Stacey  
Issued : February 15, 2005  
Patent No. : 6,855,536 *09 909 735*  
For : Materials and Methods for the Enhancement of Effective Root Nodulation  
in Legumes

Mail Stop CERTIFICATE OF CORRECTIONS BRANCH  
Commissioner for Patents  
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Alexandria, VA 22313-1450

Certificate  
JUN 27 2005  
of Correction

REQUEST FOR CERTIFICATE OF CORRECTION  
UNDER 37 CFR 1.322 (OFFICE MISTAKE)

Sir:

A Certificate of Correction (in duplicate) for the above-identified patent has been prepared  
and is attached hereto.

In the left-hand column below is the column and line number where errors occurred in the  
patent. In the right-hand column is the page and line number in the application where the correct  
information appears.

**Patent Reads:**

Abstract, Line 2:  
"transcripts"

**Application Reads:**

Page 32, Line 2 (Abstract):  
--transcription--

JUN 28 2005

**Patent Reads:**Abstract, Line 4:

“too”

Column 3, Line 54:

“hi Gram-negative”

Column 3, Line 62:“*trifoli*”Column 4, Line 4:“by. *viciae*”**Application Reads:**Page 32, Line 3 (Abstract):

--to--

Page 5, Lines 10-11:

--In Gram-negative--

Page 5, Line 15:--*trifolii*--Page 5, Line 21:--bv. *viciae*--

JUN 28 2005

A copy of pages 5 and 32 of the specification as filed, which support Applicants' assertion of errors on the part of the Patent Office, accompanies this Certificate of Correction.

Approval of the Certificate of Correction is respectfully requested.

Respectfully submitted,



Frank C. Eisenschenk, Ph.D.

Patent Attorney

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FCE/sssa

Attachments: Certificate of Correction in duplicate

Copies of pages pages 5 and 32 of the specification as filed,

*et al.* [1998] *Mol. Microbiol.* 27:1039-1050. Therefore, NolA affects repression indirectly, through the control of *nodD*<sub>2</sub> expression.

Cell-cell signaling plays a large role in the ability of bacteria to respond and adapt to a particular environment. Regulatory systems that control gene expression in response to population density (i.e., quorum sensing) govern such bacterial phenotypes as bioluminescence, antibiotic production, plasmid conjugal transfer and the synthesis of virulence factors in both plant and animal pathogens (Hardman, A.M. *et al.* [1998] *Antonie van Leeuwenhoek* 74:199-210). Quorum sensing involves the recognition of self-produced signal compounds, which function to regulate the expression of genes when threshold levels of these signals have accumulated in cultures of a sufficiently high population density. In Gram-negative bacteria, the best studied of these signals are N-Acyl homoserine-lactones (AHL) (Fuqua, W.C. *et al.* [1994] *J. Bacteriol.* 176:269-275). In Gram-positive bacteria, an equivalent role is played by various posttranslationally-modified peptides (Kleerebezem, M. *et al.* [1997] *Mol. Microbiol.* 24:895-904). Several AHL compounds have been identified from rhizobia, including *Rhizobium leguminosarum* biovars *viciae*, *trifolii* and *phaseoli*, *Rhizobium etli*, and *Rhizobium meliloti* (Thorne and Williams [1999] *J. Bacteriol.* 181:981-990; Cha *et al.* [1998] *Mol. Plant Microbe Int.* 11:1119-1129; Gray *et al.* [1996] *J. Bacteriol.* 178:372-376; Rosemeyer *et al.* [1998] *J. Bacteriol.* 180:815-821; VanBrussel *et al.* [1985] *J. Bacteriol.* 162:1079-1082; and Wijffelman *et al.* [1983] *Mol. Gen. Genet.* 192:171-176). In a few cases, these autoinducers have been implicated in the nodulation process. For example, the small AHL molecule produced by *R. leguminosarum* bv. *viciae* is required for the expression of the *rhiABC* operon, which is important for rhizosphere growth and nodulation efficiency (Cubo *et al.* [1992] *J. Bacteriol.* 174:4026-4035). In *R. etli*, mutations that disrupt AHL synthesis resulted in decreased nodule numbers on host plants (Rosemeyer *et al.* [1998] *J. Bacteriol.* 180:815-821). Therefore, AHL-mediated quorum sensing may play an important role in the symbiotic process. To date, no quorum-sensing compound has been identified from the soybean symbiont *Bradyrhizobium japonicum*.

The current invention addresses the inefficiency of soil inoculation due to the presence of competing indigenous *B. japonicum* in soil and provides novel compounds and

Abstract of the Disclosure

The subject invention relates to compounds and compositions which induce transcription of the *nolA* gene in nitrogen-fixing bacteria, such as *Bradyrhizobium japonicum*. Novel bacterial strains which are insensitive to NolA, soil inoculants comprising NolA insensitive bacteria and/or *nolA* inducers, and methods of increasing nitrogen fixation in legumes are also disclosed.

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

Page 1 of 2

PATENT NO. : 6,855,536  
DATED : February 15, 2005  
INVENTORS : John T. Loh, Gary Stacey

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Abstract,

Line 2, "transcripts"

should read

--transcription--

Abstract,

Line 4, "too"

should read

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Column 3,

Line 54, "hi Gram-negative"

should read

--In Gram-negative--

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PATENT NO. 6,855,536

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